FIG. 1

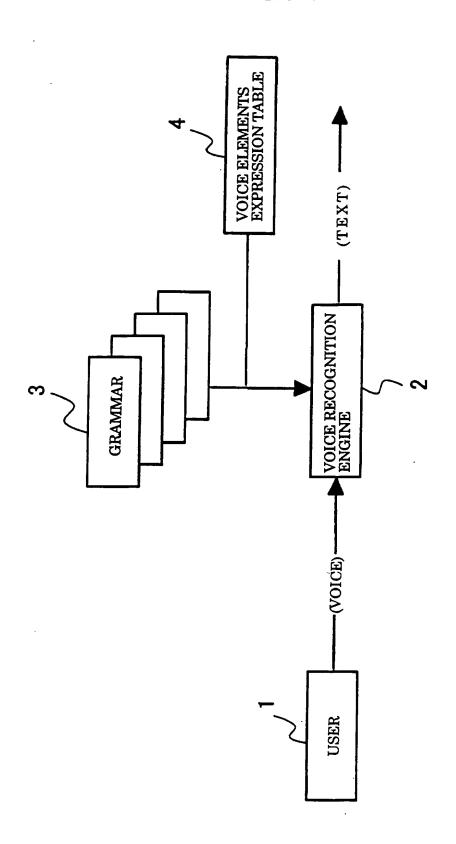
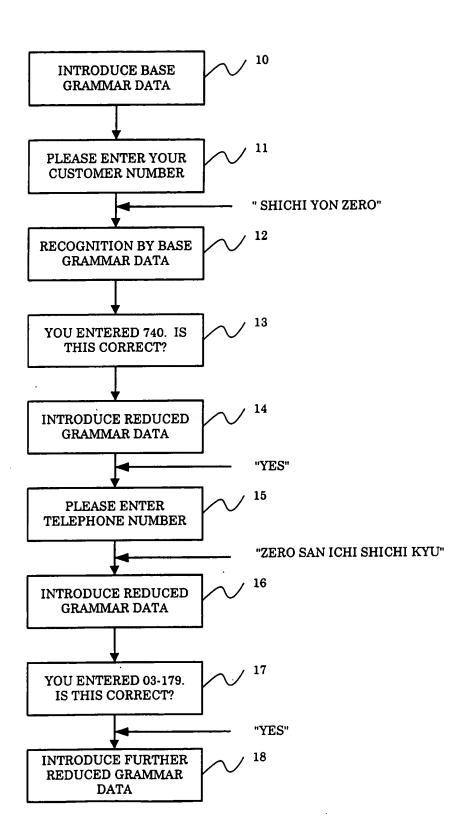


FIG. 2

O (REI)	ree
O (REI)	ree:
O (REI)	rei
O (ZERO)	zero
1	i ch i
2	ni
2 .	nii
2	:
	nii:
3	s a_n
4 (SHI)	sh i
4 (SHI)	shii
4 (SHI)	sh i i:
4 (YON)	y o_n
5	go
5	g o o:
5	gou
6	roku
7 (SHICHI)	hichi
7 (NANA)	nana
7 (SHICHI)	shich
8	h a ch i
9 (KU)	ku
9 (KYUU)	kyuu
9 (KYUU)	kv u u:

-

FIG. 3



/

s s is

FIG. 4

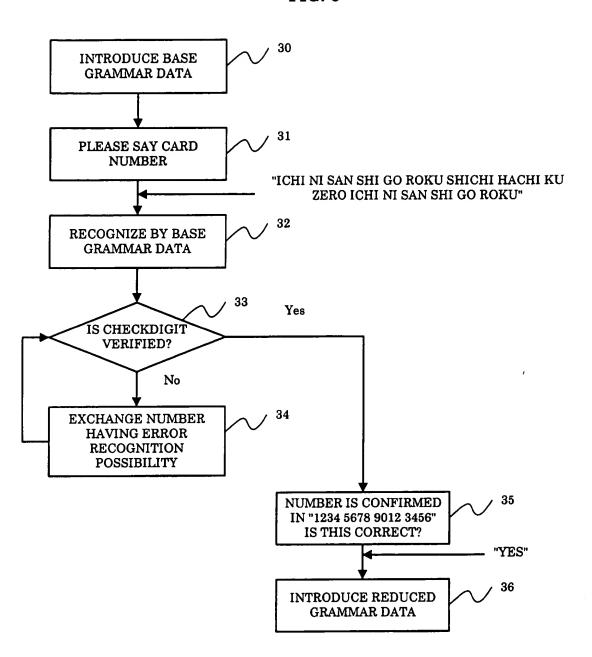
```
<digits>::=<num1><num1><num1> .
  <num1>=
  0 |
  1 |
  2
  3
  4 |
  5
  6
  7 |
  8
  9.
  \langle 0 \rangle = | zero.
                                          ← 22
\langle 1 \rangle = |i chi|
 \langle 2 \rangle = |ni|nii|nii.
 \langle 3 \rangle = | s a_n |
 \langle 4 \rangle = | y o_n .
                                          ← 21
 <5> = | g o | g o o: | g o u.
 <6>= | roku.
 \langle 7 \rangle = | hichi| shichi.
                                          ← 20
 \langle 8 \rangle = | h a ch i.
 \langle 9 \rangle = | k u | ky u u | ky u u:
```

4

FIG. 5

```
<digits>::=<num1><num1><num1> .
 \langle num1 \rangle =
 0 |
 1
 2
 3 |
 4
 5
 6
 7
8 |
9.
\langle 0 \rangle = | zero.
\langle 1 \rangle = | i ch j .
<2> = | ni| nii | nii:.
\langle 3 \rangle = | s a_n |
\langle 4 \rangle = | y o_n |
<5> = | g o | g o o: | g o u.
<6>= | roku.
\langle 7 \rangle = | h i ch i | sh i ch i.
\langle 8 \rangle = | h a ch i.
\langle 9 \rangle = | ky u u | ky u u : .
                                                23
```

FIG. 6

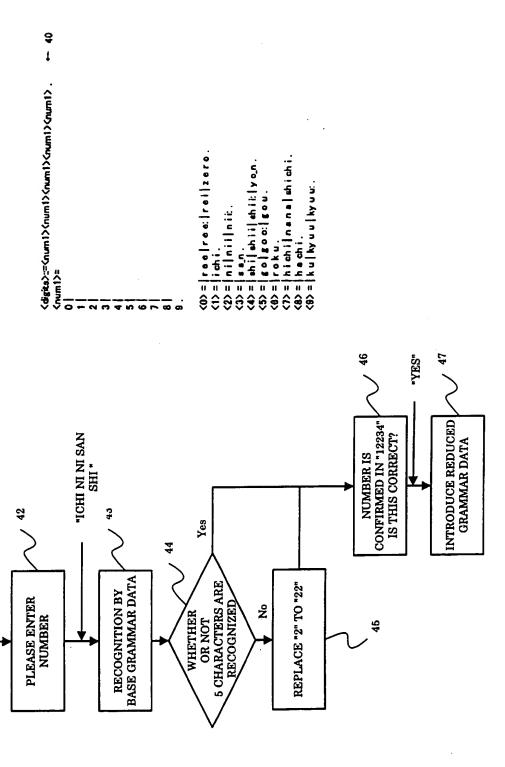


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INTRODUCE BASE GRAMMAR DATA

(a)

FIG. 7

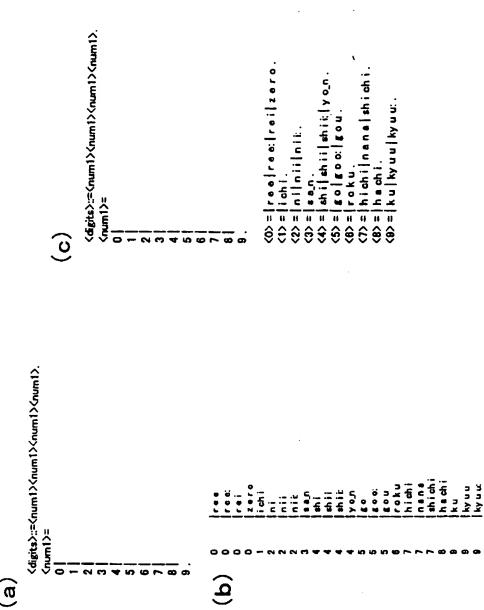


l de

FIG. 8

```
<digits>::=<num1><num1> .
 <num1>=
 0 l
 1
 2
 3
 6
7
8
9 .
<0> = | zero | zero | zero | <rei> .
\langle 1 \rangle = | i ch i.
<2> = | ni | nii | nii.
\langle 3 \rangle = | s a_n |
\langle 4 \rangle = | shi| shii| shii: | y o_n.
\langle 5 \rangle = |g \circ |g \circ o : |g \circ u.
<6> = | roku.
<7> = | hichi| nana | shichi.
<8> = | h a ch i.
\langle 9 \rangle = | k u | ky u u | ky u u:
<rei> = | r e e | r e e: | r e i .
```

FIG. 9



(a)